

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1.-126. (canceled)

127. (previously presented) A composition comprising at least two probes, each labeled with a distinguishable label, for detecting a chromosomal aberration involving the BCR and ABL genes, said chromosomal aberration having an ABL gene side and a BCR gene side, wherein one of said probes hybridizes to the ABL gene side of said chromosomal aberration and the other of said probes hybridizes to the BCR gene side of said chromosomal aberration, wherein said probes hybridize to an aberrant chromosome wherein said probes are of sufficient length to be specifically detected in cytogenetic analysis.

128. (previously presented) A composition comprising at least two probes for detecting a chromosomal aberration, each probe labeled with a distinguishable label, wherein one of said probes hybridizes to a part of the ABL gene on one side of said chromosomal aberration and the other of said probes hybridizes to a part of the BCR gene on the other side of said chromosomal aberration, wherein said probes hybridize to an aberrant chromosome wherein said probes are of sufficient length to be specifically detected in cytogenetic analysis.

129. (canceled)

130. (previously presented) The composition of claim 127 wherein the labels comprise fluorescent labels.

131. (previously presented) The composition of claim 130 wherein the fluorescent labels are distinguishable under a microscope as different colors.

132. (previously presented) The composition of claim 127 wherein the probes hybridize with chromosomal DNA *in situ* in cells.

133. (previously presented) The composition of claim 132 wherein the cells comprise those in interphase of mitotic division.

134. (previously presented) The composition of claim 133 wherein the probes after hybridization are juxtaposed as doublets if a chromosomal aberration is present.

135. (canceled)

136. (previously presented) The composition of claim 134 wherein the chromosomal aberration is further defined as comprising a translocation, said translocation formed by breakpoints which occur on the long arms of chromosomes 9 and 22.

137. (currently amended) The composition of claim 136 wherein the translocation breakpoints are further defined as occurring at the locations designated ~~t(9;22)(q11;q34)~~ t(9;22)(q34;11).

138. (previously presented) The composition of claim 137 wherein the translocation breakpoints are further defined to occur in the BCR and ABL genes respectively, and a fusion gene is formed by the translocation, and said fusion gene comprises portions of the BCR and ABL genes.

139. (previously presented) The composition of claim 132 wherein the cells comprise a sample of human tissue.

140. (previously presented) The composition of claim 139 wherein the human tissue sample comprises peripheral blood.

141. (previously presented) The composition of claim 139 wherein the human tissue sample comprises bone marrow.

142. (previously presented) The composition of claim 132 wherein the cells comprise a sample of cultured cells.

143.-145. (canceled)

146. (previously presented) The composition of claim 138 wherein the presence of said fusion gene is diagnostic or prognostic for acute lymphocytic leukemia (ALL).

147. (previously presented) The composition of claim 138 wherein the presence of said fusion gene is diagnostic or prognostic for chronic myelogenous leukemia (CML).

148. (previously presented) A kit for the detection of chromosomal aberrations, comprising a first and second nucleic acid probe, each labeled with a distinguishable label, said first probe specifically hybridizes to a part of the ABL gene on one side of said chromosomal aberration and said second probe specifically hybridizes to a part of the BCR gene on the other side of said chromosomal aberration, wherein said probes hybridize to an aberrant chromosome wherein said probes are of sufficient length to be specifically detected in cytogenetic analysis.

149. (previously presented) The composition of claim 127 wherein the aberrant chromosome is the Philadelphia chromosome.

150. (previously presented) The composition of claim 127, wherein the probe that hybridizes to the BCR gene side of said chromosomal aberration has the designation PEM12.

151. (previously presented) The composition of claim 127, wherein the probe that hybridizes to the ABL gene side of said chromosomal aberration has the designation c-hu-ABL.

152. (previously presented) The composition of claim 128, wherein the probe that hybridizes to the part of the ABL gene one side of said chromosomal aberration has the designation c-hu-ABL.

153. (previously presented) The composition of claim 128, wherein the probe that hybridizes to the part of the BCR gene on the other side of said chromosomal aberration has the designation PEM12.

154. (previously presented) The kit of claim 148, wherein said first probe has the designation c-hu-ABL.

155. (previously presented) The kit of claim 148, wherein said second probe has the designation PEM12.